

Appln No. 09/575,118
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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-33. (Cancelled)

34. (Currently Amended) A method of enabling a user to navigate a directory using a list of directory entries printed onto a surface, the list of directory entries corresponding to at least one node of an index of the directory, the method including the steps of, in a computer system:

causing a printer to print the surface by printing, substantially simultaneously:
the list of directory entries, each entry extending over a spatial zone; and
having coded data disposed therein or thereon, the coded data being
indicative of an identity of the list of directory entries and of a plurality of reference points, at least some of the coded data being provided in each spatial zone such that
at least some of the coded data is substantially coincident with the list of directory
entries, the list of directory entries and the coded data having been printed onto the
surface substantially simultaneously and the method including the steps of, in a
computer system;

receiving indicating data from a hand-held sensing device, the indicating data being indicative of both an identity of the list of directory entries and a position of the sensing device relative to the list of directory entries, the sensing device being adapted to: (a) sense at least some of the coded data when the user touches the sensing device against the surface in the vicinity of a selected printed directory entry; and (b) generate the indicating data using at least some of the sensed coded data;

identifying, using the indicating data, further directory information relating to a selected node of the index of the directory corresponding to the selected printed directory entry; and

providing the further directory information to the user.

35. (Previously Presented) A method as claimed in claim 34, wherein the further directory information includes a list of entries corresponding to at least one further node of the index.

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36. (Previously Presented) A method as claimed in claim 35, wherein the selected node of the index of the directory corresponds to one of a first, previous, next or last node in the index.

37. (Previously Presented) A method as claimed in claim 34, wherein the further directory information includes a list of further nodes in the directory index.

38. (Previously Presented) A method as claimed in claim 37, wherein the selected node of the index of the directory corresponds to one of a parent, child or root node of the index.

39. (Previously Presented) A method as claimed in claim 34, further including the steps of:

receiving, in the computer system, movement data regarding movement of the sensing device relative to the surface; and

identifying, in the computer system and from the movement data, further directory information relating to a selected node of the index of the directory.

40. (Previously Presented) A method as claimed in claim 39, including the steps of, in the sensing device:

sensing the movement of the sensing device relative to the surface using at least some of the sensed coded data;

generating the movement data; and

transmitting the movement data to the computer system.

41. (Currently Amended) A system for enabling a user to navigate a directory using a list of directory entries printed onto a surface, the list of directory entries corresponding to at least one node of an index of the directory, the system including a computer system which is adapted to:

cause a printer to print the surface by printing, substantially simultaneously:

the list of directory entries, each entry extending over a spatial zone; and,

the surface having disposed therein or thereon coded data indicative of an identity of the list of directory entries and of a plurality of reference points, at least some of the coded data being provided in each spatial zone such that at least some of the coded data is substantially coincident with the list of directory entries; ~~the list of directory entries and the~~

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~~coded data having been printed onto the surface substantially simultaneously, the system including~~

~~a computer system which is adapted to:~~

receive indicating data from a sensing device, the indicating data being indicative of both an identity of the list of directory entries and a position of the sensing device relative to the list of directory entries, the sensing device being adapted to: (a) sense at least some of the coded data when the user touches the sensing device against the surface in the vicinity of a selected printed directory entry; and (b) generate the indicating data using at least some of the sensed coded data;

identify, using the indicating data, further directory information relating to a selected node of the index of the directory corresponding to the selected printed directory entry; and

provide the further directory information to the user.

42. (Previously Presented) A system as claimed in claim 41, wherein the further directory information includes a list of entries corresponding to at least one further node of the index.

43. (Previously Presented) A system as claimed in claim 42, wherein the further node of the index corresponds to one of a first, previous, next or last node in the index.

44. (Previously Presented) A system as claimed in claim 41, wherein the further directory information includes a list of further nodes in the index.

45. (Previously Presented) A system as defined in claim 44, wherein the list of further nodes in the index corresponds to one of a parent, child or root node of the index.

46. (Previously Presented) A system as claimed in claim 41, wherein the computer system is adapted to receive movement data regarding movement of the sensing device relative to the document and interpret said movement of the sensing device as it relates to said at least one node of the index, the sensing device, when moved relative to the document, sensing the reference points using at least some of the coded data and generating the data regarding its own movement relative to the document.

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47. (Previously Presented) A method of enabling a user to navigate a directory using a list of directory entries printed onto a surface, the list of directory entries corresponding to at least one node of an index of the directory and including at least one user interactive element, the method including the steps of, in a computer system:

causing a printer to print the surface by printing, substantially simultaneously:

the list of directory entries, the at least one interactive element extending over a spatial zone; and,

the surface having disposed therein or thereon coded data indicative of an identity of the at least one user interactive element, at least some of the coded data being provided in the spatial zone such that at least some of the coded data is substantially coincident with the list of directory entries, the list of directory entries and the coded data having been printed onto the surface substantially simultaneously, the method including the steps of, in a computer system;

receiving indicating data from a sensing device, the indicating data being indicative of the identity of a selected user interactive element, the sensing device being adapted to: (a) sense at least some of the coded data when the user touches the sensing device against the surface in the vicinity of the selected user interactive element; and (b) generate the indicating data using at least some of the sensed coded data;

identifying, using the indicating data, further directory information relating to the selected user interactive element; and

providing the further directory information to the user.

48. (Previously Presented) A method as claimed in claim 47, wherein the further directory information includes a list of entries corresponding to at least one further node of the index.

49. (Previously Presented) A method as claimed in claim 48, wherein the further node of the index corresponds to one of a first, previous, next or last node in the index.

50. (Previously Presented) A method as claimed in claim 47, wherein the further directory information includes a list of further nodes in the index.

51. (Previously Presented) A method as claimed in claim 50, wherein the list of further

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nodes in the index corresponds to one of a parent, child or root node of the index.

52. (Previously Presented) A method as claimed in claim 47, further including the steps of:

receiving, in the computer system, movement data regarding movement of the sensing device relative to the selected user interactive element; and

identifying, in the computer system and from the movement data, further directory information relating to the selected user interactive element.

53. (Previously Presented) A method as claimed in claim 52, further including the steps of the sensing device:

sensing its movement relative to the selected user interactive element using at least some of the sensed coded data;

generating the movement data; and

transmitting the movement data to the computer system.

54. (Currently Amended) A system for enabling a user to navigate a directory using a list of directory entries printed onto a surface, the list of directory entries corresponding to at least one node of an index of the directory and including at least one user interactive element, the system including a computer system which is adapted to:

cause a printer to print the surface by printing, substantially simultaneously:

the list of directory entries, the at least one interactive element extending over a spatial zone; and,

the surface having disposed therein or thereon coded data indicative of an identity of the at least one user interactive element, at least some of the coded data being provided in the spatial zone such that at least some of the coded data is substantially coincident with the list of directory entries, the list of directory entries and the coded data having been printed onto the surface substantially simultaneously, the system including

a computer system which is adapted to:

receive indicating data from a sensing device, the indicating data being indicative of the identity of a selected user interactive element, the sensing device being adapted to: (a) sense at least some of the coded data when the user touches the sensing device against the surface in the vicinity of the selected user interactive

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element; and (b) generate the indicating data using at least some of the sensed coded data;

identify, using the indicating data, further directory information relating to the selected user interactive element; and

provide the further directory information to the user.

55. (Previously Presented) A system as claimed in claim 54, wherein the further directory information includes a list of entries corresponding to at least one further node of the index.

56. (Previously Presented) A system as claimed in claim 55, wherein the further node of the index corresponds to one of a first, previous, next or last node in the index.

57. (Previously Presented) A system as claimed in claim 54, wherein the further directory information includes a list of further nodes in the index.

58. (Previously Presented) A system as defined in claim 57, wherein the list of further nodes in the index corresponds to one of a parent, child or root node of the index.

59. (Previously Presented) A system as claimed in claim 54, wherein the computer system is adapted to:

receive movement data regarding movement of the sensing device relative to the selected user interactive element; and

identify from the movement data, further directory information relating to the selected user interactive element.

60. (Previously Presented) A system as claimed in claim 59, further including a sensing device adapted to:

sense its movement relative to the selected user interactive element using at least some of the sensed coded data;

generate the movement data; and

transmit the movement data to the computer system.

61. (Previously Presented) A method as claimed in claim 34, wherein the coded data is

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substantially invisible to the human eye.

62. (Previously Presented) A method as claimed in claim 34, wherein the method includes, in the computer system:

determining, in response to a request from the user, the list of directory entries;

causing generation of the coded data;

determining a layout defining an arrangement for at least one of the coded data and the list of directory entries; and,

causing printing of the coded data and the list of directory entries on the surface using the layout.

63. (Previously Presented) A method as claimed in claim 62, wherein the method includes, in a printer:

receiving at least one of the coded data, the list of directory entries and the layout;

and,

printing the form by printing the coded data and the list of directory entries.

64. (Previously Presented) A method as claimed in claim 62, wherein the method includes, in the computer system:

determining the identity;

recording an association between the identity and a page description; and,

at least one of:

generating, using the identity, the coded data, the coded data being at least partially indicative of the identity; and,

transferring the identity to a printer, the printer being responsive to the identity to generate the coded data.

65. (Previously Presented) A method as claimed in claim 34, wherein the method includes, in a relay device:

receiving the indicating data from the sensing device; and,

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transferring the indicating data to the computer system.

66. (Previously Presented) A method as claimed in claim 65, wherein the relay device is a printer.

67. (Previously Presented) A method as claimed in claim 62, wherein the layout includes at least one of:

a page description indicative of an arrangement of the list of directory entries; and,
a map indicative of an arrangement of the coded data.

68. (Previously Presented) A method as claimed in claim 67, wherein the coded data includes a number of coded data portions, and wherein the coded data is generated by:

determining a data portion identity for each coded data portion; and,
printing the coded data using the map, the map defining, for each data portion identity, a location for the corresponding coded data portion on the surface.

69. (Previously Presented) A method as claimed in claim 68, wherein the indicating data is at least partially indicative of the data portion identity and wherein the method includes:

determining, from the indicating data, the data portion identity and the map;
determining, using the data portion identity and the map, a corresponding location;
and,

determining from the corresponding location and the page description, the position of the sensing device relative to the list of directory entities.

70. (Previously Presented) A method as claimed in claim 34, wherein the method includes, in the computer system:

determining, from the indicating data, the identity;
determining, using the identity, a page description; and,
determining, using the page description, the further directory information.

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71. (Previously Presented) A system as claimed in claim 41, wherein the computer system is for:

determining, in response to a request from the user, the list of directory entries;

causing generation of the coded data, the list of directory entries;

determining a layout defining an arrangement for at least one of the coded data and the list of directory entries;

causing printing of a form by causing printing of the coded data and the list of directory entries.

72. (Previously Presented) A system as claimed in claim 71, wherein the system includes a printer for:

receiving at least one of the coded data, the list of directory entries and the layout; and,

printing the form by printing the coded data and the list of directory entries.

73. (Previously Presented) A system as claimed in claim 71, wherein the computer system is for:

determining the identity;

recording an association between the identity and a page description; and,

at least one of:

generating, using the identity, the coded data, the coded data being at least partially indicative of the identity; and,

transferring the identity to a printer, the printer being responsive to the identity to generate the coded data.

74. (Previously Presented) A system as claimed in claim 41, wherein the system includes a relay device, the relay device being for:

receiving the indicating data from the sensing device; and,

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transferring the indicating data to the computer system.

75. (Previously Presented) A system as claimed in claim 74, wherein the relay device is a printer.

76. (Previously Presented) A system as claimed in claim 41, wherein the system includes the sensing device, the sensing device including:

- (a) an image sensor adapted to capture images of at least some of the coded data when the sensing device is placed in an operative position relative to the document; and
- (b) a processor adapted to:
 - (i) identify at least some of the coded data from one or more of the captured images;
 - (ii) decode at least some of the coded data; and
 - (iii) generate the indicating data using at least some of the decoded coded data.

77. (Previously Presented) A system as claimed in claim 71, wherein the layout includes at least one of:

- a page description indicative of an arrangement of the information; and,
- a map indicative of an arrangement of the coded data.

78. (Previously Presented) A system as claimed in claim 77, wherein the coded data includes a number of coded data portions, and wherein the coded data is generated by:

- determining a data portion identity for each coded data portion; and,
- printing the coded data using the map, the map defining, for each data portion identity, a location for the corresponding coded data portion on the surface.

79. (Previously Presented) A system as claimed in claim 78, wherein the indicating data

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is at least partially indicative of the data portion identity and wherein the computer system is for:

- determining, from the indicating data, the data portion identity and the map;
- determining, using the data portion identity and the map, a corresponding location;
- and,
- determining from the corresponding location and the page description, the position of the sensing device relative to the list of directory entries.

80. (Previously Presented) A system as claimed in claim 41, wherein the computer system is for:

- determining, from the indicating data, the identity;
- determining, using the identity, a page description; and,
- determining, using the page description, the at least one parameter.

81. (Previously Presented) A method as claimed in claim 47, wherein the coded data is substantially invisible to the human eye.

82. (Previously Presented) A method as claimed in claim 47, wherein the method includes, in the computer system:

- determining, in response to a request from the user, the list of directory entries;
- causing generation of the coded data;
- determining a layout defining an arrangement for at least one of the coded data and the list of directory entries; and,
- causing printing of the coded data and the list of directory entries on the surface using the layout.

83. (Previously Presented) A method as claimed in claim 82, wherein the method includes, in a printer:

- receiving at least one of the coded data, the list of directory entries and the layout;

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and,

printing the form by printing the coded data and the list of directory entries.

84. (Previously Presented) A method as claimed in claim 82, wherein the method includes, in the computer system:

determining the identity;

recording an association between the identity and a page description; and,

at least one of:

generating, using the identity, the coded data, the coded data being at least partially indicative of the identity; and,

transferring the identity to a printer, the printer being responsive to the identity to generate the coded data.

85. (Previously Presented) A method as claimed in claim 84, wherein the method includes, in a relay device:

receiving the indicating data from the sensing device; and,

transferring the indicating data to the computer system.

86. (Previously Presented) A method as claimed in claim 85, wherein the relay device is a printer.

87. (Previously Presented) A method as claimed in claim 82, wherein the layout includes a page description indicative of an arrangement of the at least one interactive element, and wherein the method includes, generating the coded data by:

determining a data portion identity for each coded data portion, associated with the at least one interactive element; and

printing the coded data using the page description.

88. (Previously Presented) A method as claimed in claim 87, wherein the indicating data

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is at least partially indicative of the data portion identity and wherein the method includes:

determining, from the indicating data, the data portion identity and the page description; and

determining from the page description, the at least one interactive element.

89. (Previously Presented) A system as claimed in claim 54, wherein the computer system is for:

determining, in response to a request from the user, the list of directory entries;

causing generation of the coded data, the list of directory entries;

determining a layout defining an arrangement for at least one of the coded data and the list of directory entries;

causing printing of a form by causing printing of the coded data and the list of directory entries.

90. (Previously Presented) A system as claimed in claim 89, wherein the system includes a printer for:

receiving at least one of the coded data, the list of directory entries and the layout; and,

printing the form by printing the coded data and the list of directory entries.

91. (Previously Presented) A system as claimed in claim 89, wherein the computer system is for:

determining the identity;

recording an association between the identity and a page description; and,

at least one of:

generating, using the identity, the coded data, the coded data being at least partially indicative of the identity; and,

transferring the identity to a printer, the printer being responsive to the identity to generate the coded data.

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92. (Previously Presented) A system as claimed in claim 54, wherein the system includes a relay device, the relay device being for:

receiving the indicating data from the sensing device; and,
transferring the indicating data to the computer system.

93. (Previously Presented) A system as claimed in claim 92, wherein the relay device is a printer.

94. (Previously Presented) A system as claimed in claim 54, wherein the system includes the sensing device, the sensing device including:

- (a) an image sensor adapted to capture images of at least some of the coded data when the sensing device is placed in an operative position relative to the document; and
- (b) a processor adapted to:
 - (i) identify at least some of the coded data from one or more of the captured images;
 - (ii) decode at least some of the coded data; and
 - (iii) generate the indicating data using at least some of the decoded coded data.

95. (Previously Presented) A system as claimed in claim 89, wherein the layout includes a page description indicative of an arrangement of the at least one interactive element and wherein the method includes generating the coded data by:

determining a data portion identity for each coded data portion associated with the at least one interactive element; and,
printing the coded data using the page description.

96. (Previously Presented) A system as claimed in claim 95, wherein the indicating data

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is at least partially indicative of the data portion identity and wherein the computer system is
for:

determining, from the indicating data, the data portion identity and the page
description; and,

determining from the page description, the at least one interactive element.